Contents

Vol. 25, Nos. 1+2

Special issue: Major Hazards in the Transport and Storage of Pressure Liquefied Gases (Major Hazards '90). Proceedings of an international conference held at Queen's University, Kingston, Ont., May 27–30, 1990 (selected papers).

Preface vii

Section I: Tanker Studies

Pressure and temperature response of liquefied gases in containers and pressure vessels which are subjected to accidental heat input
D. Dancer (College Park, MD, U.S.A.) and D.W. Sallet (München, Germany) 3

A study of the effect of the tank diameter on the thermal stratification in LPG tanks subjected to fire engulfment
G.V. Hadjisophocleous, A.C.M. Sousa and J.E.S. Venart (Fredericton, N.B., Canada) 19

Test unit effects on heat transfer in large fires
N.R. Keltner, V.F. Nicolette, N.N. Brown and B.L. Bainbridge (Albuquerque, NM, U.S.A.) 31

Nondestructive evaluation of fiberglass reinforced plastic road tankers subjected to internal pressures using acoustic emission monitoring
P. Ouellette, S.V. Hoa and L. Li (Montreal, Que., Canada) 49

Dynamics and structural damage of tanker ships running aground
G.V. Asadi and H. Vaughan (Victoria, B.C., Canada) 61

Section II: Global Accident Models

Computerized spill hazard evaluation models
P.K. Raj and J.A. Morris (Burlington, MA, U.S.A.) 77

Expert system interface to hazard prediction models
P.V. Rao and P.K. Raj (Burlington, MA, U.S.A.) 93

Enhancements and updates to the riskmod risk analysis model
A.M. Stewart and M. Van Aerde (Kingston, Ont., Canada) and J.H. Shortreed (Waterloo, Ont., Canada) 107

A computer simulation of a derailment accident: Part I — Model basis
A.M. Birk, R.J. Anderson (Kingston, Ont., Canada) and A.J. Coppens (Ottawa, Ont., Canada) 121

A computer simulation of a derailment accident: Part II — Sample simulation
A.M. Birk, R.J. Anderson (Kingston, Ont., Canada) and A.J. Coppens (Ottawa, Ont., Canada) 149

Section III: Release Analysis

Initiation step of boiling liquid expanding vapour explosions
C.A. McDevitt (West Vancouver, B.C., Canada), C.K. Chan, K.N. Tennankore (Pinawa, Man., Canada) and F.R. Steward (Fredericton, N.B., Canada) 169

Subcooled and saturated liquid flow through valves and nozzles
D.W. Sallet (College Park, MD, U.S.A.) 181

Simple transient release rate models for releases of pressurised liquid petroleum gas from pipelines
V.H.Y. Tam and R.B. Higgins (Sunbury-on-Thames, U.K.) 193

An empirical analysis of Canadian gasoline and LPG truck releases
A.M. Stewart and M. Van Aerde (Kingston, Ont., Canada) 205

Two-phase swelling and entrainment during pressure relief valve discharges
K. Sumathipala, J.E.S. Venart and F.R. Steward (Fredericton, N.B., Canada) 219

An evaluation of four box models for instantaneous dense-gas releases
V. Gudivaka and A. Kumar (Toledo, OH, U.S.A.) 237

Effect of low temperature on the rich flammability limits of some gaseous fuels and their mixtures
I. Wierzba, K. Harris and G.A. Karim (Calgary, Alta., Canada) 257

Author Index 267

Vol. 25, No. 3

Special Issue: Characterization and Cleaunup of Chemical Waste Sites. Based on the Symposium on Characterization and Cleaunup of Chemical Waste Sites, American Chemical Society 197th National Meeting, Division of Industrial & Engineering Chemistry, Dallas, TX, U.S.A., April 10, 1989

Preface iii

Strategic alternatives for dealing with the regulatory maze governing environmental cleanup
S.A. Bleicher (Washington, DC, U.S.A.) 269

The environmental redevelopment of a railyard and port facility
P. Scovazzo and R. Strubble (McLean, VA, U.S.A.) 277

Process development for *in situ* remediation of a highly contaminated groundwater plume
J.V. Lepore, L.H. Turner, D.S. Kosson and R.C. Ahlert (Piscataway, NJ, U.S.A.) 289

Selection of a remedial alternative at a Superfund site in an environmentally sensitive context
R. Odom Jr. (Fort Mill, SC, U.S.A.) and W.D. Adams (Orlando, FL, U.S.A.) 309

Application of groundwater modeling in remedial action development
S.H. Djafari and D.E. Troxell (Dallas, TX, U.S.A.) 321

Treatment of phenol and cresol contaminated soil
R.A. Evangelista (Sacramento, CA, U.S.A.), H.L. Allen (Edison, NJ, U.S.A.) and R.M. Mandel (San Francisco, CA, U.S.A.) 343

Investigating a groundwater solute plume in three dimensions
M. McBride (Bethesda, MD, U.S.A.) 361

Remediation of PCB soil contamination by on-site incineration
R.M. Leuser, L.A. Velazquez, A. Cohen (West Chester, PA, U.S.A.) and J. Janssen (Springfield, IL, U.S.A.) 375

Avoiding site contamination by waste minimization
J.S. Hunter and D.M. Benforado (St. Paul, MN, U.S.A.) 387

Author index Vol. 25 399